

REMARKS

Claims 1-24 and 29-40 were under consideration at the time the office action issued. In the instant response, claims 1, 36 and 38 have been amended, claims 23 and 24 cancelled and new claim 41 (a composite of claims 1, 23 and 24) presented.

The instant invention in its simplest form is directed to a spiral staircase that articulates such that the stowed position of the steps, handrail and balusters is so greatly reduced that it folds into relatively small space. The staircase system includes at least one rail element and a plurality of stair elements. Baluster elements are coupled to the rail elements and to the stair elements. A center support comprising a plurality of telescoping elements is coupled to and supports the rail element and the stair elements. The center support system has a stowed state and a deployed state.

The election of species A (Fig. 3A) claims 23, 24, 34 and 35 is affirmed.

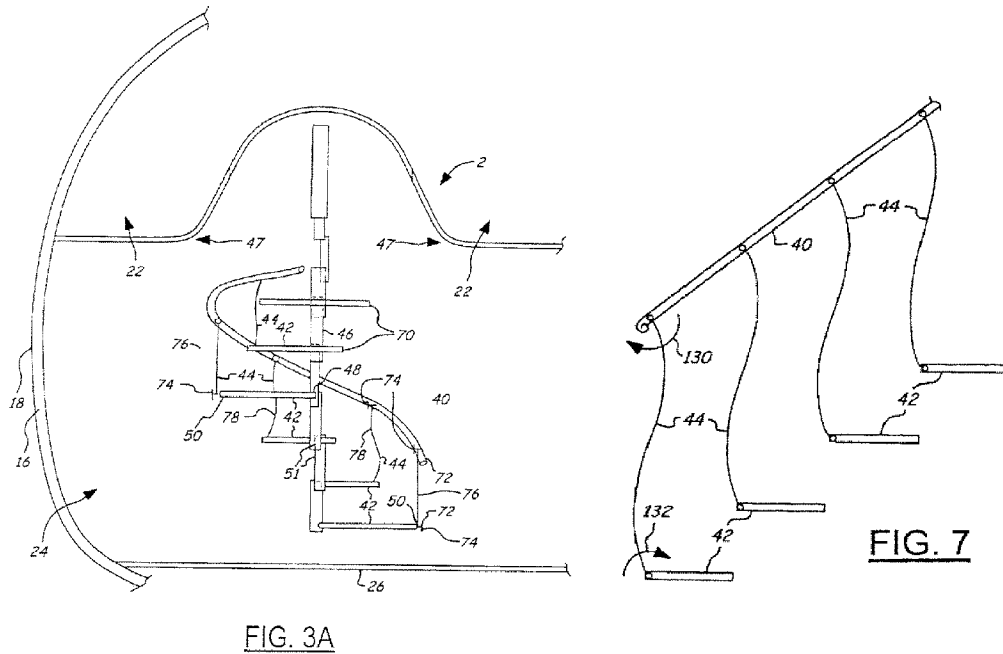
The objection to the disclosure (paragraph 29) has been avoided by the proffered amendment of this paragraph.

The rejection of claim 36 under 35 U.S.C. 112 has also been avoided by amendment of this claim.

Before discussing the rejection of the claims under 35 U.S.C. 102 and 103, the applicants note that the applicants have used the term “baluster” in describing and defining their invention. In using this term, the applicants intend that it be construed as they have used it and illustrated it and more particularly as it is defined in the standard dictionaries (see attached Webster’s Ninth New Collegiate Dictionary, page 127) – “baluster – 1: an upright often vase-shaped support for a rail 2: an object or vertical

member (as the leg of a table, a round in the back of a chair, or the stem of a glass)
having a vaselike or turned outline.”

Attention is directed to the drawings in the case for example Figs. 3A and 7 for example from which the support nature and vase-shaped structure are confirmed. See particularly part # 44.



The applicants do not intend any other meaning. This is not an instance where the applicant is acting as his own lexicographer and relying on a special meaning for this term. There is no provision in the statutes, the rules, whatever for the Examiner to supply his own meaning or definition for the term “baluster.” Yet this is exactly what the Examiner has done.

The Examiner has rejected claims 1-4, 6-8, 10-15, 17-20, 29-31, 33 and 36-37 under 35 U.S.C. 102(b) as being anticipated by Viking Selstair (“Viking”). In so doing, the Examiner states “Viking discloses a collapsible spiral staircase having all of the

applicants' claimed structure, including a. "at least one rail element..." (ring-shaped "rail elements,"), b. "...a plurality of stair elements..." ("stair"), c. "...a plurality of baluster elements coupled to said at least one rail element and to said plurality of stair elements..." (the vertically oriented strands of the surrounding netting are "baluster elements," d. "...a center support system..." ("center support system" refers to plurality of vertical winch wires that extend the length of the staircase...")

The ring-shaped elements cannot be said to disclose the said element 40 of the invention which as recited in claim 3 is made of a material capable of supporting a plurality of baluster elements which extend from the rail element and in turn also supporting the stair elements, and made of aluminum steel or a composite material. The wire netting and the isolated rings do not suggest the claimed rail and baluster elements. For all of the reasons outlined above, the baluster element is not disclosed or suggested by the vertically oriented strands of the surrounding netting. The Viking invention is intended for use as an offshore entry/evacuation system "for offshore locations for heights up to 45 meters above sea level... (and) can be lowered both to the sea and to the deck of a vessel..." The dimensions, weight, capacity, etc. make it totally unsuitable for installation in an aircraft. The Examiner's designation of the "staging stair element" is not entirely clear from the drawing. However, it can be appreciated that they are not formed of stair elements nor that they are coupled to a central support system. The very dimensions of the Viking staircase would not suggest any application of its components or combination thereof for use in a stowable spiral staircase that allows easy access to overhead areas of an aircraft. For example, the diameter of the Viking spiral staircase is 84 "or 7 feet, the height per section during stowage is 5.9" at least three (3) sections are

shown in the illustration or at least 17.7” approximately nine (9) times that of the invention. The claimed invention in contrast “utilizes a minimal amount of space in both a stowed and deployed arrangement” (paragraph 0005). “The rail element 40, the stair element 42, and the baluster elements 44 form a thin flat circular disk-shaped structure 82 when in the stowed state. In one embodiment of the present invention, the disk-shaped structure 82 has a cross-sectional height or thickness and of approximately less than two inches... This small thickness T allows the staircase systems... to reside within a minimal amount of space when stowed...” [paragraph 0042]. Structures having a cross-sectional height of less than 2” cannot be said to be comparable with staircase structures having a diameter of 8 ft, a stretched out height per section of 8 ft 2” and a height per section during stowage of 5.9 inches. (underlining ours). There is no way above and beyond the differences in structure that an artisan would consider the Viking Offshore Entry System’s teaching as applicable to the stowable aircraft system intended for use in an aircraft.

The rejection of dependent claims 2-4, 6-8, 10-15, 17-20, 29-31, 33 and 36-37 as being anticipated by Viking similarly must fail. The ring-shaped rail elements, the baluster elements, the center support system (plurality of vertical winch wires) cannot be compared to the handrail elements 40, the elements identified as balusters, i.e., the vertically oriented strands of the surrounding) of the surrounding netting with the balusters 44 of the invention and the center support system as shown in the illustration with the center support system 46 of the invention.

The independent claim as well as the claims which depend thereon and are directed to preferred features are not shown or anticipated by Viking and this rejection under 35 U.S.C. 102 should be withdrawn.

The rejection of claims 5 and 21 under 35 U.S.C. 103(a) over Viking. The use of special materials for the rail elements is not claimed per se but as a preferred material for use in the manufacture of the rails (claim 5). As to claim 21, the cross-sectional height of 2" is also not claimed per se but the concept of such tiny dimensions is critical to evaluating applicant's invention and its intended use. The Examiner's contention that the applicant has not disclosed that the recited collapsed height provides any unexpected result. Throughout the specification, the applicant has stressed that it provides access to overhead areas of an aircraft that utilizes a minimal amount of space within an aircraft. The Viking system is contained within a storage unit from which it can easily be remotely launched from a boat and/or stand by vessel. This is totally not applicable to the applicants invention which is required to be on board stowed in a specific overhead compartment.

Claim 9 which is directed to the feature of the shape of the radial edges of the stair elements is not being claimed per se. The Examiner in his rejection of claim 9 under 35 U.S.C. 103(a) over Viking in view of Manna notes that "Viking does not expressly disclose stairs with curved radial edges" but states that Manna does and that he does so for rigidity and strength. In the invention the stair elements are designed, as is clear from figures 5 and 6, so the stair elements form "pieces of a pie", each stair element 42 forms a piece of the pie. The rail element 40 and the baluster elements 44 are arced around the pie or stair elements 42. [paragraph 0049].

More to the point is paragraph 0050 which recites “The shape of the stair elements 42” or the radial edges 120 are designed for aesthetic, ergonomic and human utilization factors.” This is different than what the Examiner has concluded.

Claim 16 has been rejected under 35 U.S.C. 103(a) over Viking in view of Nicholls (5551372). Claim 16 is specific to the balusters being made of a composite material as stated by the Examiner “The baluster elements of Viking are netting components... Nicholls discloses netting made from composites. First, it is noted that the wire netting of Viking is used to “surround the stairs completely, so that there is no risk of falling out.” Nicholls teaches a modular cage system for a terrestrial animal or bird fabricated from wire mesh panels. Netting is not involved, nor is a structure that has a stowed state and a deployed state. Nothing in the Nicholls patent would suggest its combination with Viking and even if this was so, the use of the composite mesh in a collapsible structure.

Claim 32 has been rejected as being obvious (35 U.S.C. 103(a)) over Viking in view of Meyerdierks (6431103). Claim 32 is directed to the feature of the deployment system. The Examiner relies on Meyerdierks as teaching a winch and a handle and considers adding this feature to Viking would be within the skill of the art. Meyerdierks is directed to a winch to be located at the point ensuring the least troublesome run of the ropes to be operated by it such as halyards or sheets., i.e., all elongated, flexing or pulling or tension elements which can be placed around a winch drum. The skilled in the art would not consider this reference or any teaching therein to regulate deployment and storage of a staircase.

Claims 22, 23, 34 and 35 have been rejected under 35 U.S.C. 103(a) as unpatentable over Viking in view of Sandwith (2002/0182026)

The Examiner admits that Viking's central support system is a winch system instead of a telescoping system but relies on Sandwith as teaching a telescoping hydraulic cylinder as an equivalent structure. This is patently not so as the artisan would not look to art directed to a double-deck trailer in which the upper deck can be tilted down to load or unload cargo. The reference suggests hydraulic cylinders or a cable and winch system for raising or lowering the upper deck. When the upper deck is lowered, a boat trailer, all terrain vehicle or any similar load may be driven or winched into place. This subject matter, its implementation has nothing to do with the subject matter of Viking (to suggest combination) and most certainly nothing to do with the invention of a collapsible spiral staircase for installation in an aircraft.

The Examiner has rejection claims 38-40 under 35 U.S.C. 103(a) as being unpatentable over Viking in view of Greiss (4022404). The latter is relied on as teaching that the Viking staircase can be located in an aircraft. Greiss which is assigned to the same assignee as applicant's invention teaches an aircraft having three decks having cart lifts between the upper deck and middle deck through which the modular food and beverage containers can be elevated and lowered. This has nothing to do with a deployable spiral staircase which when not in use can be compacted into a disc of 2' in size and which unlike the Greiss construction is not permanently installed in a space and unlike the invention can not be used to maximize storage and seating area etc.

None of the secondary references if properly combinable would result in a teaching or suggestion of the invention. The various rejections thereon should be withdrawn.

Claim 24 has been indicated as drawn to allowable subject matter if properly presented. This has been done and this claim as well as the other claims should now be found allowable to the applicant.

SUMMARY

It is submitted that the application is in condition for allowance and notification thereof is respectfully requested.

Respectfully Submitted,
Attorney for Applicant

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DEFENDANT
EXHIBIT

Merriam
Webster

or cinnaamic acid and used esp. in medicine b : a preparation containing resinous substances and having a balsamic odor 2 a : a balsam yielding tree; esp : BALSAM FIR b : IMPATIENS. esp : a common garden ornamental (*Impatiens balsamina*) 3 : BALM 5 — bal-sam-ic \bôl-'sam-ik\ adj
balsam flr n (1805) : a resinous American evergreen tree (*Abies balamea*) that is widely used for pulpwood and as a Christmas tree and is the source of Canada balsam
balsam poplar n (1786) : a No. American poplar (*Populus balsamifera*) that is often cultivated as a shade tree and has buds thickly coated with an aromatic resin — called also *balm of Gilead*, *tacamahac*
Bal-ti \bôl-tê-, bôl-\ n (1901) : a Tibeto-Burman language of northern Kashmir
Bal-tic \bôl-'tik\ adj [ML. (*mare*) *balticum* Baltic sea] (1590) 1 : of or relating to the Baltic sea and to the states of Lithuania, Latvia, and Estonia 2 : of or relating to a branch of the Indo-European languages containing Latvian, Lithuanian, and Old Prussian — see INDO-EUROPEAN LANGUAGES table
Bal-ti-more orlô \bôl-tə-,mô(-)r-, -mô(-)r-, -mar-\ n [George Calvert, Lord Baltimore] (1808) : a common American oriole (*Icterus galbula*) in which the male is brightly colored with orange, black, and white and the female is primarily brown and greenish yellow — called also *Baltimore* \bôl-\
Bal-to-Slavic \bôl-(C)-tò-'slav-ik-, -'släv-\ n (1896) : a subfamily of Indo-European languages consisting of the Baltic and the Slavic branches — see INDO-EUROPEAN LANGUAGES table
Ba-luchi \bə-'lu-che\ n, pl Baluchi or Baluchis [Per *Balūchī*] (1616) 1 a : an Indo-Iranian people of Baluchistan b : a member of this people 2 : the Iranian language of the Baluchi people
bal-us-ter \bəl-'stər\ n [F. *balustre*, fr. It. *balaustra*, fr. *balaustra* wild pomegranate flower, fr. L. *balustium*, fr. Gk. *balouston*; fr. its shape] (1602) 1 : an upright often vase-shaped support for a rail 2 : an object or vertical member (as the leg of a table, a round in the back of a chair, or the stem of a glass) having a vaselike or turned outline
bal-us-trade \ə-,strād\ n [F., fr. It. *balustrata*, fr. *balaustra*] (1644) : a row of balusters topped by a rail; also : a low parapet or barrier
Bam-bara \bam-'bar-\ n, pl Bambara or Bambaras (1883) 1 : a member of a Negroid people of the upper Niger 2 : a Mandé language of the Bambara people
bam-bi-no \bam-'bi-(-)nô-, bäm-\ n, pl -nos or -ni \(-)nê\ [It. dim. of *bambó* child] (1722) 1 pl usu *bambini* : a representation of the infant Christ 2 : CHILD, BABY
bam-boos \(')bam-'bü\ n, pl bamboos [Malay *bambu*] (1586) : any of various chiefly tropical woody or arborescent grasses (as of the genera *Bambusa*, *Arundinaria*, and *Dendrocalamus*) including some with hollow stems used for building, furniture, or utensils and young shoots used for food — bamboo adj
bamboo curtain n, often cap B&C (1949) : a political, military, and ideological barrier in the Orient
bam-boo-zle \bam-'bü-zəl\ v, -boo-zled; -boo-zling \-'büz-(ə-)lɪŋ\ [origin unknown] (1703) : to deceive by underhand methods : DUPE, HOODWINK — bam-boo-zle-ment \-'bü-zəl-mənt\ n
ban \bən\ vb banned; ban-ning [ME *bannen* to summon, curse, fr. OE *bannan* to summon; akin to OHG *bannan* to command, L *fari* to speak, Gk *phnaiō* to say, *phônē* sound, voice] vt (12c) 1 archaic : CURSE 2 : to prohibit esp. by legal means (~ discrimination); also : to prohibit the use, performance, or distribution of (~ a book) (~ a pesticide) ~ vi : to utter curses or maledictions
ban n [ME, partly fr. *bannen* & partly fr. OF *ban*, of Gmc origin; akin to OHG *bannan* to command] (14c) 1 : the summoning in feudal times of the king's vassals for military service 2 : ANATHEMA, EXCOMMUNICATION 3 : MALEDICTION, CURSE 4 : legal or formal prohibition 5 : censure or condemnation esp. through social pressure
ban \bän\ n, pl ba-ni \bän-'lē\ [Rom] (1880) — see *lew* at MONEY table
Ban-a-ch space \bam-'æk-, -ək-\ n (Stefan Banach †1945 Pol. mathematician) (1949) : a normed vector space for which the field of multipliers comprises the real or complex numbers and in which every Cauchy sequence converges to a point in the space
ba-nal \bə-'nal, bā-, -nāl; bā-'nal; bā-'näl\ adj [F., fr. MF. of compulsory feudal service, possessed in common, commonplace, fr. *ban*] (1840) : lacking originality, freshness, or novelty : TRITE. SYN see INSIPID
ba-nal-ty \bə-'nal-tē also bā- or bā-\ n — ba-nal-ize \bə-'nal-iz, bā-, -nāl; bā-'nal; bā-'näl\ v — ba-nal-ly \bə-'nal-lē, bā-, -nāl; bā-'nal;-bā-'näl\ adv
ba-na-na \bə-'nan-, əsp Brit -'nä-n-\ n, often attril [Sp or Pg: Sp, fr. Pg. of African origin; akin to Wolof *banāna* banana] (1597) 1 : an elongated usu. tapering tropical fruit with soft pulpy flesh enclosed in a soft usu. yellow rind 2 : a widely cultivated perennial herb (genus *Musa* of the family Musaceae, the banana family) bearing bananas in compact pendulous bunches
banana oil n (1926) 1 : a colorless liquid acetate C₇H₁₁O₂ of amyl alcohol that has a pleasant fruity odor and is used as a solvent and in the manufacture of artificial fruit essences 2 : a lacquer containing banana oil
banana republic n (1935) : a small dependent country; esp : one run despotically
ba-na-as \bə-'nan-az, əsp Brit -'nä-n-\ adj (1968) : CRAZY (go ~) (drives me ~)
banana seat n (1965) : an elongated bicycle saddle
banana split n (1920) : ice cream served on a banana sliced in half lengthwise and usu. garnished with flavored syrups, fruits, nuts, and whipped cream
ba-nausic \bə-'nö-sik-, -zik\ adj [Gk *banaiskos* of an artisan, nonintellectual, vulgar, fr. *banaios* artisan] (1845) : relating to or concerned

|ə| about |ʔ| kitten, F table |ər| further |ə| ash |ə| ace |ə| cot, cart
 |aʊ| out |tʃ| chin |t| bet |ē| easy |g| go |i| hi |i| ice |i| job
 |ŋ| sing |ɔ| go |ɒ| law |ɔɪ| boy |θ| thin |tʰ| the |ʊ| foot |ʊ| foot
 |y| yet |zʰ| vision |d, k, ʰ, æ, ɛ, u:| see Guide to Pronunciation